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EXAMINER
FLEURANTIN, JEAN B

ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 09/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .   6) ☐ Other: .

DETAILED ACTION

1.   Claims 1-28 are presented for examination.

Priority

2.   Receipt is acknowledgment of papers submitted 35 U.S.C. 119 (a)-(d), which papers have

been placed of record in the file.

Information Disclosure Statement

3.   The references cited in the Information Disclosure Statement, PTO-1449, have been fully

considered.

Claim Rejections - 35 U.S.C. § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

Claims 1-12, 14-17 and 22-28 are rejected under 35 U.S.C. 102(b) as being anticipated by

C.M.R. Leung 'GDSA-An X.500 Directory Implementation Supporting Heterogeneous

Databases-1991' ("Leung").

As per claims 1 and 14, Leung teaches a method of arranging data in a database as

claimed comprises creating a first table adapted for storing the data and having one row for each

data entry (thus, the DIT table holds the information of the structure of the DIT, each record

contains the system identifier of an object that of its parent, which is equivalent to creating a first

table adapted for storing the data and having one row for each data entry) (see page 88, lines 14-

16); and

creating a second table adapted for storing data components and having one row for each

component of the data (thus, the ENTRY table holds detailed information about each directory,

each record holds the system identifier of an object and an attribute value of an attribute type of

the object in both normalized and raw forms; which is readable as creating a second table

adapted for storing data components and having one row for each component of the data) (see

page 88, lines 17-19).

As per claims 2 and 15, Leung teaches a method as claimed, wherein the data is a

structured data type (thus, the ENTRY table holds detailed information about each directory,

each record holds the system identifier of an object, which is readable as wherein the data is a

structured data type) (see page 88, lines 17-19).

As per claims 3 and 16, Leung teaches a method as claimed, wherein the data is a string

data type (thus, the parameters are in a form that is independent of the storage structures of both

DIT and ENTRY, if the function succeeds ti returns the results if any; which is readable as

wherein the data is a string data type) (see page 89, lines 18-20).

As per claim 4, Leung teaches a method as claimed, wherein the data is or represents a

X.509 certificate (thus, DSEP decodes the request and passes the decoded request in the form of

Directory Abstract Services with the appropriate parameters to DOP, when DOP finishes

processing the request and returns the result to DSEP, DSEP encodes the results and sends it

through the established connection back to the requesting DUA; which is readable as X.509

certificate) (see figure 1, page 87, lines 9-13).

As per claims 5 and 26, Leung teaches a method as claimed, wherein the component data

is a checksum or fingerprint (thus, after collecting the results it passes them to DSEP in the form

of directory abstract services results, the results may be positive or negative, negative results

occur when errors are added detected during processing of the user requests; which is readable as

wherein the component data is a checksum or fingerprint) (see page 87, lines 16-20).

As per claims 6 and 23, Leung teaches a method as claimed, where the database is a part

of an electronic directory services system (thus, the database systems used form an indispensable

part of the directory systems, which is equivalent to the database is a part of an electronic

directory services system) (see page 85, lines 23-24).

As per claims 7 and 24, Leung teaches a method as claimed, where the electronic

directory services system comprises an X.500 and LDAP services system (thus, an X.500

directory consists of one or more distributed Directory System Agents where directory

information is kept and user requests are proposed, the DIT and DIB 'Directory Information' are

partitioned and distributed in these DSAs each DSA also holds knowledge of the distribution of

the DIT 'Directory Knowledge', all requests in the form of directory abstract services from

directory users must be submitted through Directory User Agents acting as the interface between

the suers and the X.500 directory, DUAs use the Directory Access Protocol 'DAP' to

communicate with DSAs to allow for uniform distributed processing of user requests

communication between a pair of DSAs is governed by the Directory System Protocol 'DSP';

which is readable as where the electronic directory services system comprises an X.500 and

LDAP services system) (see page 86, lines 35-44).

As per claim 8, Leung teaches a database having a data storage arrangement as claimed,

comprises a search table containing at least one row having a plurality of columns (thus, the

structural part of DIBP consists of two objects, the DIT and ENTRY stored as two relational

tables the DIT table holds the information of the structure of the DIT, each record contains the

system identifier of an object that of its parent and its RDN, the RDNs are coded in such a way

that matching them can be done efficiently, the ENTRY table holds detailed information about

each directory object, each record holds the system identifier of an object and an attribute value

of an attribute of the object in both normalized; which is readable as a search table containing at

least one row having a plurality of columns) (see page 88, lines 14-20); and

a subsearch table containing at least one row having a plurality of columns including a

component identifier column (thus, the ENTRY table holds detailed information about each

directory object, each record holds the system identifier of an object and an attribute value of an

attribute of the object in both normalized; which is readable as a subsearch table containing at

least one row having a plurality of columns including a component identifier column) (see page

88, lines 17-19).

As per claims 9 and 10, Leung teaches the database as claimed, wherein the columns of the search table are in the form "EID, AID, VID, Norm", where EID identifies an object to which a value belongs, AID identifies an attribute type of the value, and VID identifies one of a possible number of attribute values in the one entry, and CID identifies the component identifier (thus, attributes and values, hierarchy and values, alias, data tolerance, hierarchy; which is equivalent to wherein the columns of the search table are in the form "EID, AID, VID, Norm", where EID identifies an object to which a value belongs)(see figure 2A, conceptual design, implementing X.500 in a RDBMS, attributes and values, hierarchy and values, alias, data tolerance, hierarchy).

As per claim 11, Leung teaches a database as claimed, further comprises a subattribute table containing at least one row having a plurality of columns in which a description or reference to the subsearch table is provided (thus, the ENTRY table holds detailed information about each directory object, each record holds the system identifier of an object and an attribute value of an attribute of the object in both normalized; which is readable as a subattribute table containing at least one row having a plurality of columns in which a description) (see page 88, lines 17-19).

As per claim 12, Leung teaches a database as claimed, wherein the columns of the subattribute table are in the form "CID, SYN, DESC, OBJECT ID, FLAGS"(see figure 2A, conceptual design, implementing X.500 in a RDBMS, attributes and values, hierarchy and values, alias, data tolerance, hierarchy).

As per claim 17, Leung teaches a system as claimed, being an X.500 or LDAP directory

services system (thus, an X.500 directory consists of one or more distributed Directory System

Agents where directory information is kept and user requests are proposed, the DIT and DIB

'Directory Information' are partitioned and distributed in these DSAs each DSA also holds

knowledge of the distribution of the DIT 'Directory Knowledge', all requests in the form of

directory abstract services from directory users must be submitted through Directory User Agents

acting as the interface between the suers and the X.500 directory, DUAs use the Directory Access

Protocol 'DAP' to communicate with DSAs to allow for uniform distributed processing of user

requests communication between a pair of DSAs is governed by the Directory System Protocol

'DSP'; which is readable as being an X.500 or LDAP directory services system) (see page 86,

lines 35-44).

As per claim 22, in addition to the discussion in claim 1 above, Leung teaches steps of

determining a component of a given data entry (thus, adds a new entry, which is equivalent to a

given data entry) (see page 89, line 6;

executing one of an exact or initial matching on the second table in order to locate the

component (thus, the RDNs are coded in such a way that matching them can be done efficiently,

which is readable as executing one of an exact or initial matching on the second table in order to

locate the component) (see page 88, lines 15-19); and

returning the given data entry matching the component located (thus, each record holds

the system identifier of an object and an attribute value of an attribute type of the object in both

normalized and raw form, the normalized values allow efficient value matching of all attribute

types through the use of standard SQL query language; which is readable as returning the given

data entry matching the component located) (see page 88, lines 15-20).

As per claim 25, in addition to the discussion in claim 4 above Leung teaches steps of and

or a check sum of the data and or a fingerprint of the data (thus, after collecting the results it

passes them to DSEP in the form of directory abstract services results, the results may be positive

or negative, negative results occur when errors are added detected during processing of the user

requests; which is readable as a check sum of the data and or a fingerprint of the data) (see page

87, lines 16-20).

As per claim 27, Leung teaches a method as claimed, wherein the search is conducted

using a search table to locate the fingerprint or checksum (thus, after collecting the results it

passes them to DSEP in the form of directory abstract services results, the results may be positive

or negative, negative results occur when errors are added detected during processing of the user

requests; which is readable as wherein the search is conducted using a search table to locate the

fingerprint or checksum) (see page 87, lines 16-20).

As per claim 28, Leung teaches a method as claimed, further wherein components of the

checksum or fingerprint are searched (thus, after collecting the results it passes them to DSEP in

the form of directory abstract services results, the results may be positive or negative, negative

results occur when errors are added detected during processing of the user requests; which is

readable as wherein components of the checksum or fingerprint are searched) (see page 87, lines

16-20).

Claim Rejections - 35 U.S.C. § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
>
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
>
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
>
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
>
> manner in which the invention was made.

Claims 13 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over

C.M.R. Leung 'GDSA: An X.500 Directory Implementation Supporting Heterogeneous

Databases-1991' ("Leung").

As per claims 13 and 18, in addition to the discussion in claim 1 above, Leung

substantially teaches all the subject matter of claimed invention with the exception of an exact

third table directed to one or more selected components of values and configured to have one row

. for each component of each value. However, Leung teaches the structural part of DIBP consists

of two objects stored as two relational tables, each record holds the system identifier of an object

and an attribute value of an attribute type of the object in both normalized and raw forms; which

is readable as a third table directed to one or more selected components of values (see figure 4b,

pages 87-88, lines 16-12). Thus it would have been obvious to one ordinary skill in the art at the

time the invention was made to modify the teachings of Leung with the steps of a third table

directed to one or more selected components of values. This modification would allow the

teachings of Leung to improve the accuracy of the directory searching methods and systems; and

provide a complete set of operations that can only be used to manipulate objects in the structural

part (see page 88, lines 3-4).

As per claim 19, Leung substantially teaches a directory services system as claimed,

wherein the data is a structured data type (thus, the parameters are in a form that is independent

of the storage structure of both DIT and ENTRY, which is readable as a structured data type) (see

page 89, lines 18-19).

As per claim 20, Leung substantially teaches a directory services system as claimed,

wherein the data is a string data type (thus, the parameters are in a form that is independent of the

storage structure of both DIT and ENTRY if the function succeeds it returns the results if any,

which is readable as a string data type) (see page 89, lines 18-20).

As per claim 21, substantially Leung teaches a system as claimed, being an X.500 or

LDAP directory services system (thus, an X.500 directory consists of one or more distributed

Directory System Agents where directory information is kept and user requests are proposed, the

DIT and DIB 'Directory Information' are partitioned and distributed in these DSAs each DSA

also holds knowledge of the distribution of the DIT 'Directory Knowledge', all requests in the

form of directory abstract services from directory users must be submitted through Directory

User Agents acting as the interface between the suers and the X.500 directory, DUAs use the

Directory Access Protocol 'DAP' to communicate with DSAs to allow for uniform distributed

processing of user requests communication between a pair of DSAs is governed by the Directory

System Protocol 'DSP'; which is readable as being an X.500 or LDAP directory services system)

(see page 86, lines 35-44).

6.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Dann US Patent Number 5,333,317 relates to information identifiers stored in a

database directory.

Conclusion

7.   Any inquiry concerning this communication from examiner should be directed to Jean

Bolte Fleurantin at (703) 308-6718. The examiner can normally be reached on Monday through

Friday from 7:30 A.M. to 6:00 P.M.

If any attempt to reach the examiner by telephone is unsuccessful, the examiner's

supervisor, Mrs. KIM VU can be reached at **(703) 305-8449.** The FAX phone numbers for the

Group 2100 Customer Service Center are: *After Final* **(703) 746-7238,** *Official* **(703) 746-7239,**

and *Non-Official (703) 746-7240.* NOTE: Documents transmitted by facsimile will be entered

as official documents on the file wrapper unless clearly marked *"DRAFT".*

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Group 2100 Customer Service Center receptionist whose telephone

numbers are **(703) 306-5631, (703) 306-5632, (703) 306-5633**.

Jean Bolte Fleurantin

August 25, 2002

JBF/

HOSAIN T. ALAM
PRIMARY EXAMINER